Data

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Associated dataset: Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget

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Academic Department and/or Research Group:

Biological Sciences Department, VIMS

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Description: *Include information of data format and file types, software required to run/analyze files, and information about data collection methods, site location, etc.*

This dataset features the results from the numerical simulation described in the associated publication (Friedrichs et al.). The simulation results are in the standard, self-documented NetCDF format (extension .nc); see https://www.unidata.ucar.edu/software/netcdf/ for more information. Files in this format can be manipulated and displayed by a wide range of freely available software. The results from the simulation are divided into monthly files (suffix _0001 to _0061) of two types. The first type holds time-averaged model fields (e.g., ocean_avg_0001.nc) and the second type holds time-averaged diagnostics (e.g., ocean_dia_0001.nc). Detailed information about the open source numerical model used in the study (Regional Ocean Modeling System, ROMS) is available at www.myroms.org.

File Description Table: *Use this table to describe your individual files and/or folders, add rows as needed.*

File Name	Description
ocean_avg_00xx.nc	Time-averaged oceanic fields (Jan. 2004 to Dec. 2008). Each file contains 30 days worth of results and the fields have a temporal resolution of 1 day.
ocean_dia_00xx.nc	Time-averaged oceanic diagnostic fields (Jan. 2004 to Dec. 2008). Each file contains 30 days worth of results and the diagnostics have a temporal resolution of 3 days. Diagnostics *_hadv, *_vadv, *_rate, *_vdiff, P_Production, NO3_uptake and C_excess_uptake are vertically-integrated over the cell's thickness (units per square meter).

Abstract: *Include if data have a unique abstract*

The dataset includes model outputs used in the associated publication (Friedrichs et al.), which used the United States Eastern Continental Shelf (USECoS) biogeochemical model embedded in the Regional-Ocean-Modeling-System (ROMS) to examine the impact of the oceanic circulation on the nitrogen budget of the Mid-Atlantic Bight (MAB). The model simulation covers the period 2004 to 2008 and is fully described in the associated publication. The model simulation highlights that the horizontal along-shelf and across-shelf fluxes dominate the spatiotemporal variability of net community production (NCP) in the MAB. The highest NCP is found in a year when inorganic nitrogen entering from across the continental slope is high and terrestrial inputs are low.

DOI: *Please indicate if you would like a DOI assigned to this dataset*

Yes, we would like a DOI assigned to this dataset.

Funding: *Acknowledge your funding source, including grant # if applicable*

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Keywords: *Please list terms to be used for indexing your data*

Mid-Atlantic Bight, nitrogen budget, continental shelf, net community production, biogeochemical circulation model, regional ocean modeling system

Associated Publications:

Friedrichs, M.A.M., P. St-Laurent, Y. Xiao, E. Hofmann, K. Hyde, A. Mannino, R.G. Najjar, D. Narvaez, S.R. Signorini, H. Tian, J. Wilkin, Y. Yao and J. Xue, Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget, manuscript accepted for publication in Journal of Geophysical Research: Oceans, https://doi.org/10.1029/2018JC014424

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